

Indexing and Abstracting

Lecture 04 -- Types of Indexes and Abstracts

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Types of Indexes

- Alphabetical Index
- Author Index
- Book Index
- Citation Index
- Classified Index
- Coordinate Index
- Cumulative Index
- Faceted Index

Types of Indexes (Continued)

- First-line Index
- Hypermedia Index
- Internet Index
- Multimedia Index
- Periodical Index
- Permuted Title Index
- String Index
- Word Index

Alphabetical Indexes

- The arrangement of an index in alphabetical order is the most common method
- The arrangement of subject heading, cross-references, and qualifying terms are also alphabetical
- The major drawbacks are
 - Problem of synonymy
 - Scattering of entries

Author Indexes

- Consist of people, organizations, corporate authors, government agencies, universities
- Authors can be used as an indirect subject approach
 - Authors are strong indicators of subject content (Cleveland 1976)
- Rules for author indexes
 - The number of names allowed for each document
 - Use of full name or initials
 - Use of common names

Book Indexes

- List of words, generally alphabetical, at the back of a book
- Giving a page location of the subject or name
- Books without index are incomplete

Citation Indexes

- A citation index consists of a list of articles, with a sublist under each article of subsequently published papers that cite the articles
 - Author index
 - Subject index
- A cited paper has an internal subject relationship with the papers that cite it

Example of Citation Indexes

- Arts & Humanities Citation Index
- Science Citation Index
- Social Science Citation Index
- CSCI
- CSCD
- THCI
- TSSCI

ISI引文索引相關資料庫

- 科學引文索引
(Science Citation Index, SCI)
- 社會科學引文索引
(Social Science Citation Index, SSCI)
- 藝術暨人文學引文索引
(Arts & Humanities Citation Index, A&HCI)
- 期刊引用報告
(Journal Citation Report, JCR)

科學引文索引概況

- 由美國科學資訊研究所(Institute of Scientific information, 簡稱ISI)編輯出版的, 其所長Eugene Garfield是引文索引的創始人
- SCI是將被選用的期刊上的每篇科學論文或其他文獻及其所附的被引文獻一一著錄, 並按照一定的規則編排的一種獨特的索引系統
- SCI是一種國際性的多科學的綜合性索引, 包括的學科有數、理、化、生物學、醫學等, 其中以物理、化學、生命科學所佔比例最大

SCI的結構

- 被引文獻索引
(Citation Index, Arranged by Cited Author)
- 匿名引文索引 (Citation Index, Anonymous)
- 被引專利索引 (Citation Index, Patent)
- 來源文獻索引 (Source Index)
- 機構團體索引 (Corporate Index)
- 輪排主題索引 (Permuterm Index)

被引文獻索引

- 按照被引文獻的第一位作者姓名字順編排的一種索引, 由被引證項和引證項組成
- 索引的作用就是從被引作者來查找引用作者姓名及其文獻的出處, 可以用來回答某作者的文章在近期內被那些作者引用過、被引文獻和來源文獻發表在何種期刊、何年、何卷、何頁

被引文獻索引形式

| | | | | | | | | | | |
|---|-------------------------|-----|-------------|-----|------|----|---|--|--|--|
| 1 | ANSANELLI V | 57 | AM J SURG | 146 | 117 | | | | | |
| 8 | BOLLER M | | AM J ROENTG | 127 | 277 | 91 | | | | |
| | ANSARA I | | | | | | | | | |
| 2 | 71 MONATSHFTE CHEMIE | 102 | 1855 | | | | | | | |
| | 71 SEMIN CIM ETAT SOLI | | | | | | | | | |
| | WANGER C | | METALL T B | 7 | 485 | 91 | | | | |
| | ANSARI A | | | | | | | | | |
| 3 | 68 AM J GASTROENTEROL | 50 | 456 | | | | | | | |
| | ANDERSSO A | | AMER SURG | 42 | 173 | 91 | | | | |
| | REDDI K K | | P NAS US | 73 | 2308 | 91 | | | | |
| | 68 S MED J | 61 | 858 | | | | | | | |
| | WAYNE KS | | AM R RESP D | 114 | 15 | 91 | | | | |
| | ANSARI AH | | | | | | | | | |
| | 69 AM J OBSTET GYNEC | 103 | 511 | | | | | | | |
| | PENTTILA IM | | HORMONE MET | 8 | 229 | 91 | R | | | |
| | 70 FERTILITY SETERILITY | 21 | 873 | | | | | | | |
| 4 | STRUVE FA | | OBSTET GYN | 33 | 741 | 91 | | | | |
| | YOUNG JK | | -- | 3 | 322 | 91 | | | | |

1. 被引文獻主要作者
2. Wagner C. 引用二篇 Ansara I. 所發表的文章
3. 被引文獻資料
4. Ansari AH 1970年發表在Fertility Sterility 的文獻被二個人引用

資料來源：李德竹，西文科學文獻摘要與索引。台北：文華，民85年，頁41。

匿名引文索引

- 只要是沒有註明作者姓名的“匿名引文款目”都列入匿名引文索引
- 它是按照被引論文的期刊名縮寫字順排列的，刊名相同的，卷數由小至大排列；卷數相同，則按起始頁碼由小至大排列
- 透過這種索引法，從被引期刊名稱可以查到那些“無名氏”論文被哪些人引用過；其引用文獻發表在何種雜誌、何年、何卷、何頁

被引專利索引

- 此索引收錄被引用過的專利文獻，按其專利號碼順序排列
- 根據專利號查閱，可以查到某專利被哪些和被多少作者在期刊文獻上引用過；不僅可以獲得引用文獻的作者及原文出處，還可以用來評鑑有關專利的價值

被引專利索引形式

| | | | | | | | | | | |
|---|------|--------------|-------------|---|----|-----|----|--|--|--|
| 1 | 3 | 410 | 817 | | | | | | | |
| 2 | 1968 | MCCLELLAN JM | APPL US | | | | | | | |
| | | FRISCH KC | POLYM PLAST | R | 4 | 1 | 91 | | | |
| | 4 | 302 | 592 | | | | | | | |
| | 1981 | TIEMAN CH | US | | | | | | | |
| 3 | | HUANG J | J AGR FOOD | | 35 | 368 | 91 | | | |
| | | | J HETERO CH | | 24 | 1 | 91 | | | |

1. 被引專利編號
2. 被引專利年代
3. 專利發明者
4. 專利狀態（申請或再版）
5. 資料類型代碼
6. 專利國別
7. 引用作者
8. 期刊縮寫
9. 卷期
10. 頁次
11. 出版年

資料來源：李德竹，西文科學文獻摘要與索引。台北：文華，民85年，頁42。

來源文獻索引

- 來源文獻索引是根據來源文獻作者的姓名字順編排的一種索引
- 如果論文沒有署名作者或以團體機構署名發表，則以刊名代替作者姓名，並按刊名縮寫（排在文章標題下）字順排列在“來源索引”的最前面。
- 若一篇文章有多位作者，在非第一作者姓名項下只作“參見”，但列出原文出處
- 為便於從“刊名縮寫”或“專著叢書”簡稱查到全稱，在來源索引前附有“來源出版物目錄（Lists of Source Publications）”

來源文獻索引形式

| | | | | | | | | | |
|---|--|---------------|-----|--|--|--|--|--|----|
| 1 | → CHAUDHARY BN | | | | | | | | |
| 2 | → .UV SPECTRAL STUDIES OF A FEW NUCLEAR SUBSTITUTED PHENOTHIAZINES | E3462 | | | | | | | 8 |
| 3 | → ANN NUC SCI | 90(4):339-343 | 91 | | | | | | 9 |
| 4 | → LOHIA COLL CHEM LABS, CHURU 331001, INDIA | 4R | | | | | | | |
| | | | | | | | | | |
| 5 | → CHEATHAM TJ | | | | | | | | |
| | → .SMITH JR - REGULAR AND SEMISIMPLE MODULES - BIBLIOGRAPHY | F6479 | | | | | | | 10 |
| | → PAC J MATH | 65(2):315-332 | 91 | | | | | | |
| | → SAMFORD UNIV. BIRMINGHAM, AL 35209, USA | .R | | | | | | | |
| 6 | → CHENG LC | | | | | | | | |
| 7 | → see ROGUS EM | BIOC BIOP A | 464 | | | | | | |
| | | | 347 | | | | | | |

1. 主要作者
2. 文獻題名
3. 期刊縮寫
4. 作者聯絡地址
5. 共同作者
6. 互見款目第二作者
7. 互見款目第一作者
8. ISI期刊編號
9. 參考文獻數
10. 參考文獻數無法計算

資料來源：李德竹，西文科學文獻摘要與索引。台北：文華，民85年，頁43。

機構團體索引

- 根據來源文獻索引中作者所屬單位的所在地及名稱編制的一種索引。
- 1978年以前，以作者所屬機構為標目，其下列出該機構近期發表過論文的作者姓名及文章出處。
- 1978年以後，分成“地區”和“機構”兩部分。
 - 地區部份—根據機構所在地或國名的字順排列
 - 機構部分—根據機構名稱的字順排列，是“地區部份”的輔助索引
- 透過團體索引可以查到某一學術機構或研究單位有哪些人、在哪些期刊中發表文章，可以進一步了解這些機構的研究動態和學術水平

機構團體索引形式

| | | | | | | | | | |
|---------------------|--------------------------------|----------------|----|------|----|--|--|--|--|
| 1 | → MARYLAND | | | | | | | | |
| 2 | → GERMANTOWN | | | | | | | | |
| | → .FAIRCHILD SPACE & ELECTR CO | | | | | | | | |
| | → ISELLAPPA RG | | | | | | | | |
| | → J GUID CON | | | | | | | | |
| | | | | | | | | | |
| 3 | → GREENBELT | | | | | | | | |
| 10 | → .NASA | | | | | | | | |
| | → .GOODARD SPACE FLIGHT CTR | | | | | | | | |
| | → AIKIN AG | APPL OPTICS | 21 | 2421 | 91 | | | | |
| | → BOPP BW | ASTRONOM J | 87 | 1035 | 91 | | | | |
| | → BROWN OS | IEEE BIOMED | 29 | 613 | 91 | | | | |
| | → BYTHROW PF | J GEO R S P | 87 | 5131 | 91 | | | | |
| | | | | | | | | | |
| ORGANIZATION | | | | | | | | | |
| | → NARA MED COLL | | | | | | | | |
| | → NARA MED COLL | | | | | | | | |
| | → JAPAN | NARA | | | | | | | |
| | → NARA TECH COLL | | | | | | | | |
| | → JAPAN | YAMATOKORIYAMA | | | | | | | |
| | → NASA | | | | | | | | |
| | → MARYLAND | GREENBELT | | | | | | | |
| | → VIRGINIA | HAMPTON | | | | | | | |

1. 地區標目
2. 地區子目
3. 機構名稱
4. 機構論文清單
5. 卷期
6. 頁次
7. 出版年
8. 期刊縮寫
9. 資料類型代碼
10. 子機構

資料來源：李德竹，西文科學文獻摘要與索引。台北：文華，民85年，頁44。

輪排主題索引

- 1967年開始編制的一種篇名關鍵詞索引
- 將“來源文獻索引”報導的論文標題中所有可以表示論文內容的詞，按順序進行相互組配輪排在主題詞下的每個配合詞後均列出作者姓名（未署名著者的，列出期刊縮寫）
- 再根據作者姓名查閱“來源文獻索引”，即可得到有關論文的完整著錄項目

輪排主題索引形式

```
ACONITASE
ACTIVITY -----> SUZUKI T
                -----> WRIGHT JA
ALTERED -----> "
BACILLUS -----> AGRAWAL PK
CELLS -----> WRIGHT JA

ACOUSTIC
sa ION-ACOUSTIC
sa SOUND
ABSENCE -----> GOULD PK

AESTIVAL
see ESTIVAL
```

資料來源：李德竹，西文科學文獻摘要與索引。台北：文華，民85年，頁44。

SCI的特點

- 編制獨特—提供不同於傳統的分類、主題及其他方法的新穎檢索途徑
- 索引深度較大
- 可進行順時序檢索—即可由較舊的文獻檢索新的文獻
- 檢索簡單、方便；可利用“循環法”擴大檢索範圍
- 涉及的專業面廣、綜合性強，具有多功能和特殊作用

SCI的資訊檢索功能

- SCI的工作是回答某作者發表的某些論文曾被哪些人的哪些文章索引，這些文章刊登在何種期刊何年何卷何頁上
- 檢索近期內某些作者或學術機構發表了哪些文章，及其出處等

中國科學引文索引

引文著者①

- ②引文名稱③ [引文類型④]- 出版年, 卷(期): 起始頁
來源文章著者⑤ 來源期刊⑥-出版年, 卷(期): 起始頁

- ①引文著者項: 引文第一著者姓名。團體著者和匿名著者引文此項不著錄。
- ②引文標識符: 引導每一篇被引文獻。
- ③引文名稱項: 引文所在的期刊刊名或書名, 其它類型引文此項不著錄。
- ④引文類型項: 引文類型注釋。引文類型包括期刊文章、圖書、會議文獻、學位論文、報告、專利、標準和其它。引文類型為期刊文章時, 此項省略。
- ⑤來源文章著者項: 來源文章第一著者姓名。
- ⑥來源期刊項: 來源期刊刊名。刊名超過6個漢字時, 只取前6個漢字, 省略部分用“...”表示。

中國科學引文索引 (Continued)

引文著者

- 引文名稱[引文類型]- 出版年, 卷(期): 起始頁
來源文章著者 來源期刊-出版年, 卷(期): 起始頁

例:

王建生

- 化學研究- 63, 4 (1) : 54
張一凡 催化學刊- 94, 5 (2) : 30

中國科學引文索引 (Continued)

戴芳濤

- 中國經濟植物病原目錄[圖書]-58
梁克恭 植物病理學報-94,24(1):90
- 中國真菌總匯[圖書]-79
李華 真菌學報-94,13(1):71
林英任 真菌學報-94,13(1):8
劉培貴 雲南植物研究-94,16(1):47
王圓 真菌學報-94,13(1):1
張中義 植物病理學報-94,24(1):85
莊文穎 真菌學報-94,13(1):13

Classified Indexes

- Its contents arranged systematically by classes or subject headings
- It is important for scientific purpose
- Layman find classified indexes difficult to use

Index by Categories

GEOGRAPHIC BREAKDOWNS

BY CENSUS DIVISION

Communications and Transportation
Travel to US, spending by world area of residence, and economic impact, by spending category and State, 1996, annual rpt. 2044-49

Energy Resources and Demand
Electric power plant production, capacity, sales, and fuel stocks, use, and costs, by State, 1997-98, annual rpt. 3164-11

Health and Vital Statistics
Births and birth and fertility rates, by parent and birth characteristics and location, 1993, US Vital Statistics annual rpt. 4144-1

Natural Resources, Environment, and Fisheries
Wildlife-related recreation, hunting, and fishing economic impacts, by species and region, 1996, 3506-16.2

Recreation and Leisure
Fishing (black bass) participation, by location and participant characteristics, 1996, 3506-16.3

Veterans Affairs
Hospital capacity, use, services, and mgmt. for VA compared to community hospitals, by location, 1975-97 with projections to 2010, CAO rpt. 26121-765

BY CITY

Agriculture and Food
Peaches production, prices, and use by State, and terminal market prices in selected cities, 1998, annual rpt. 1311-12

Sweetpotato production, acreage, shipments, and prices, for North Carolina and other producer States, 1970s-98, annual rpt. 1311-33

Watermelon production, acreage, shipments, prices and arrivals by city, by State, 1998, annual rpt. 1311-35

Communications and Transportation
Truck rates for fresh vegetables, by crop, growing area, and market, periodic situation rpt with articles. 1561-11

Energy Resources and Demand
Heating oil addition to Strategic Petroleum Reserve, costs and benefits under alternative plans and policies, with data on supply, demand, and movements, 1975-2010, 3338-16

Government and Defense
State and local gov productivity measures, with output, employment, and financial data, for 11 gov services, 1967-92, 6828-34

Health and Vital Statistics
Births and birth and fertility rates, by parent and birth characteristics and location, 1993, US Vital Statistics annual rpt. 4144-1

Coordinate Indexes

- Coordinate indexes allow terms to be combined or coordinated
- Combine two or more single terms to create a new class

Cumulative Indexes

- A Combination or merging of a set of indexes over time
- Apply to journals and to large, important works and are published as separate volumes
- Cumulative indexes are complex and usually are done by teams of indexers
- Require a good deal of editing because of duplications, terminology changes and a need to adjust the depth of indexing

Faceted Indexes

- (activities and operations)
 - (business and management operations)
 - (communications activities)
 - (computer operations)
 - (educational and psychological activities)
 - (general activities)
 - (information and library operations)
 - (socioeconomic activities)
 - (technical and manufacturing operations)
- (buildings and facilities)
- (communications media)
- (document types)
 - (by availability, access, organization)
 - (by information content, purpose)
 - (by medium, physical form)
- (fields and disciplines)
- (hardware, equipment, and systems)



Faceted Indexing

- Analytic-synthetic processing
- Pre-coordinated



First-line Indexes

- Applied to poems
- All the words in the first line of a poem are listed in their alphabetical order
 - <http://www.photoaspects.com/chesil/firstlines.html>
- Another interesting example
 - First-line index for music



Miscellaneous Indexes

- Hypermedia Indexes
 - Allows users to thread their way to what they want through electronic nodes and links between those nodes.
 - Much more transparent to the user
 - Someone has to make indexing decisions in establishing these nodes and connections
- Internet Indexes
- Multimedia Indexes



Multimedia Indexes

- Open problem?
- New challenge

Periodical Indexes

- A vital channel for science and all scholarship
- Individual indexes
 - Particular journal
- Broad indexes
 - A group of journals

Permuted Title Indexes

- Title index works well for highly specific searching
- Permuted title word indexes are created by systematically rotating information-conveying words in the title as subject entry points into the index
- Drawbacks
 - Titles may not accurately reflect content
 - Limited number of terms in titles
 - Lack of vocabulary control

String Index

- An indexer first constructed a title-like phrase
- This string was then coded according to a set of rules, using operators and codes
- All strings would be in normal syntactic form, connected by appropriate prepositions and conjunctions

PRECIS System

- Each string consisted of three parts: the lead; the qualifier; display
 - Lead. Qualifier
 - Display
 - Coverage of meaning: Qualifier > Lead > Display
- "A document on the evaluation of the professional education of nurses"
 - Example taken from *Indexing from A to Z*, p.453
 - Nurses > Professional education > Evaluation
 - Nurses
 - Professional education. Evaluation
 - Professional education. Nurses
 - Evaluation
 - Evaluation. Professional education of nurses

PRECIS System (Continued)

- Damage to corps by floods in India
- India > corps > damage > floods
- Index results
 - India.
 - Corps. Damage by floods
 - Corps. India
 - Damage by floods
 - Damage. Corps. India
 - Floods

NEPHIS System

- Lead term. Context
- “A document on the use of numerical data in the humanities and in the social sciences”
- @Use? of <Numerical <Data>>? in <Humanities? and <Social Sciences? and >>
 - Data. Numerical -. Use in Humanities and Social Sciences
 - Humanities and Social Sciences. Use of Numerical Data
 - Numerical Data. Use in Humanities and Social Sciences
 - Social Sciences and Humanities. Use of Numerical Data

Word Index

- Individual names and word in documents
- Indexes to the individual names and words that the author used
- Bible concordance

KWOC, KWIC, KWAC

| KWOC | TERM | FREQ | ITEM ID |
|-------------|----------|---------------------------------------|-------------------------|
| | chips | 2 | doc2, doc4 |
| | computer | 3 | doc1, doc4, doc10, |
| | design | 1 | doc4 |
| | memory | 3 | Doc3, doc4, doc8, doc12 |
| KWIC | chips/ | computer design contains memory | |
| | computer | design contains memory chips/ | |
| | design | contains memory chips/ computer | |
| | memory | chips/ computer design contains | |
| KWAC | chips | computer design contains memory chips | |
| | computer | computer design contains memory chips | |
| | design | computer design contains memory chips | |
| | memory | computer design contains memory chips | |



Abstract

- Abstract
 - The ancient peoples attached content abstracts to papyrus rolls
- Summary
 - Runners returned from battle with summaries of the events



Classify Abstracts by Function

- Indicative Abstract
- Informative Abstract
- Critical Abstract



Classify Abstracts by Method

- Excerpt-based abstract
- Generation-based abstract



Classify Abstract by Use

- Discipline-oriented abstract
 - Is written for a specific area of knowledge
- Mission-oriented abstract
 - Is written to support application activities
 - Is defined in terms of an assignment rather than a subject area
- Slanted abstract
 - User-oriented



Classify Abstract by Author

- Author
- Subject area expert
 - e.g. [Excerpta Medica](#)
- Professional abstractor



Structured Abstract

- Use predefined template to store abstract in a structured form
- Used for research articles
- Sample predefined template
 - Background
 - Aim
 - Method
 - Results
 - Conclusion



Indicative Abstracts

- Also known as descriptive abstracts
- Contain significant information and specific data
 - “The number of onions grown in California was determined and reported in this article”
- Is shorter, is written in general terms, and does not give a progressive account of the paper’s development
- Is never expected to replace the paper itself
- Shows the purposes and the results of the paper



Informative Abstracts

- Try to present as much quantitative and qualitative data as possible
- Is the most useful for documents reporting on experimental investigations
- Is the skeleton of the document itself with all the flesh missing
- Cover four essential points
 - Objective and scope of the work
 - Methods used
 - Results
 - Conclusions

Critical Abstracts

- A critical abstract makes a value judgment or editorial comment
- Editorial or abstract
- An idea in a few abstractors
 - Good abstract avoids the bias and personal viewpoint of critical comment
- Critical abstract can be a powerful tool
 - Heavily quality filtering
 - Used for general papers with broad overviews

Example: Educational Administration Abstracts

- Abstract Numbers: In bold, for handy reference
- Subject Classifications
- Descriptors: In bold; identify subject immediately
- Alphabetical-by-Author Citations: Complete bibliographic details
- Abstracts: Concise summary of contents
- Cumulative Indexes: The fourth issue each year prints the cumulative author and subject indexes for the year, along with a current "Source List."

Educational Administration Abstracts

ADMINISTRATIVE STRUCTURE AND PROCESS → Category

Organization and Process → SubCategory

0784 → Abstract Number Subject Classifications

Beck, Lynn G. Metaphors of educational community: an analysis of the images that reflect and influence scholarship and practice. Educational Administration Quarterly 35(1):13-45, Feb. 1999. → Source

ACADEMIC PERFORMANCE. ORGANIZATIONAL CULTURE. SCHOOL-COMMUNITY RELATIONS. → Descriptor

The idea that schools should function as communities is popular in education circles. It is also confusing, for the term "community" means different things to different people. This article argues that efforts to reduce ambiguity by linking the concept to clearly defined indicators may be short-sighted. Multiple meanings linked with the notion of community reflect the richness of this concept, the author contends, and these meanings should be explored and understood—not reduced or eliminated. Analyzing language used by academics and practitioners writing about community in school settings, the author attempts to demonstrate that the concept is both complex and reasonably coherent. Recognizing that this is so can only assist scholars who desire to better understand this phenomenon, the author argues. Similarly, knowledge of the ways one make sense of being in and out of community can provide guidance to people seeking to create and sustain communal schools. → Abstract

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NOTE: Numerical entries refer to abstract numbers

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